

1 What is claimed is:

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3 1. Electronic circuit for short-circuit monitoring one of at least two series-
4 connected intermediate-circuit capacitor units, whereby the instantaneous
5 difference between the voltage present at the junction between two of the
6 units to be monitored and a reference voltage that is relevant for the
7 monitoring and is shunted from the intermediate-circuit voltage is used as
8 the control signal, which, if the capacitor short circuits, falls below or
9 exceeds a response threshold and thereby generates an error signal.

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11 2. The electronic circuit as recited in Claim 1,
12 wherein each intermediate-circuit capacitor unit is composed of one or
13 more capacitor(s) connected in series and/or in parallel.

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15 3. The electronic circuit as recited in Claim 1 or 2,
16 wherein the reference voltage is formed by a chain of series-connected
17 resistors, which is connected in parallel with the intermediate-circuit
18 capacitor units to be monitored.

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20 4. The electronic circuit as recited in one of the Claims 1 through 3,
21 wherein the response threshold that is relevant for the system is
22 determined by the breakdown voltage of a zener diode.

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24 5. The electronic circuit as recited in one of the Claims 1 through 4,
25 wherein an error signal voltage is generated using a current-voltage
26 converter directly from the current that flows due to the voltage asymmetry
27 produced when an error occurs.

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29 6. The electronic circuit as recited in one of the Claims 1 through 5,
30 wherein the current, which flows when an error occurs, is limited by the
31 resistance of the chain of resistors.

- 1 7. The electronic circuit as recited in one of the Claims 1 through 6,
2 wherein each of the intermediate-circuit capacitor units to be monitored
3 corresponds to a part of the chain of resistors, whereby the part is
4 composed of one or more resistors.
- 5
- 6 8. The electronic circuit as recited in one of the Claims 1 through 7,
7 wherein the ratio of capacitor capacitance to the corresponding part of the
8 chain of resistors is essentially the same for all pairs of corresponding
9 resistor parts and capacitors.
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- 11 9. The electronic circuit as recited in one of the Claims 1 through 8,
12 wherein the error signal voltage is based on a freely selectable ground
13 potential.
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- 15 10. The electronic circuit as recited in one of the Claims 1 through 9,
16 wherein the error signal voltage is detected using a light-emitting diode-
17 photodiode pair.
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- 19 11. The electronic circuit as recited in one of the Claims 1 through 10,
20 wherein all intermediate-circuit capacitor units have the same capacitance.
- 21
- 22 12. The electronic circuit as recited in one of the Claims 1 through 11,
23 wherein each of the intermediate-circuit capacitor units is composed of
24 one capacitor.
- 25
- 26 13. The electronic circuit as recited in one of the Claims 1 through 12,
27 wherein every part of the chain of resistors is composed of one resistor.
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